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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/781,639	02/12/01	OUDERKIRK A	51466USAID.0

EXAMINER	
CHANG, A	
ART UNIT	**PAPER NUMBER**
2872	

DATE MAILED: 06/18/01

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OFFICE OF INTELLECTUAL PROPERTY COUNSEL
3M INNOVATIVE PROPERTIES COMPANY
P.O.BOX 33427
ST. PAUL MN 55133-3427

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Application No.	Applicant(s)	
	09/781,639	OUDERKIRK ET AL.	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15)☒ Notice of References Cited (PTO-892)
16)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18)☐ Interview Summary (PTO-413) Paper No(s). _____ .
19)☐ Notice of Informal Patent Application (PTO-152)
20)☐ Other: .

DETAILED ACTION

Remark

1. This Office Action is in response to applicant's preliminary amendment filed on February 21, 2001 which will be entered as paper number 2.

2. By this amendment, the applicant has canceled claims 1-8 and has newly added claims 9-17. Claims 9-17 remain pending in this application.

3. This application has also been amended to recite that it is a continuation-in-part application of a parent application 08/402,349 now US patent 5,828,488. Applicant is however reminded that an application is qualified to be regarded as a continuation-in-part application from a parent application only when the children application recites an improvement of the parent application. In this case, the claims of the instant application are fully disclosed by the parent application. It is therefore not sure how does it qualified as a continuation-in-part of the cited parent application 08/402,349.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
>
> (f) he did not himself invent the subject matter sought to be patented.

5. Claims 9-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Weber et al (PN. 6,025,897) or Ouderkirk et al (PN. 5,828,488).

Both Weber et al and Ouderkirk et al teaches an *optical display* (170, Figure 10) that is comprised of a *liquid crystal matrix* (147) that serves as the light modulator that is capable of selectively altering a

polarization state passing through the modulator, a *rear dichroic polarizer* (150) and a *reflective polarizer* (110), (please see Figure 10 and column 9). The dichroic polarizer (150) has the implicit property of passing a portion of the light reflected by the reflective polarizer to the modulator in order to provide light to the display.

With regard to claims 9 and 10, both Weber et al and Ouderkirk et al teach that the reflective polarizer comprises a plurality of layers with the differences between the indices of refraction for the adjacent two layers being different in two in-plane axes, (please see Figure 4 and columns 4-5). With regard to claim 12, the reflective axis of the reflective polarizer must make an angle between 0 and 90 degree with respect to the transmission axis of the dichroic polarizer in order for the light generated from the reflective polarizer passes through the dichroic polarizer to reach the modulator.

With regard to claim 13, both Weber et al and Ouderkirk et al teach that a lamp (172) is provided as a supplemental lighting for the display, (please see Figure 10). Both Weber et al and Ouderkirk et al also demonstrate, in Figure 6, that an ambient light may also illuminate the optical display. With regard to claim 14, it is implicitly true that the images will be reversed in these two lighting conditions since the ambient light goes through reflection in the display arrangement.

With regard to claim 15, both Weber et al and Ouderkirk et al teach that the optical display has a diffusely lit background via a diffuse reflective surface (176, Figure 10) both under ambient lighting and supplemental lighting conditions and the pixels appear to be dark against it.

With regard to claims 16 and 17, both Weber et al and Ouderkirk et al further teach that the optical display comprises an optical structure (413) disposed between the reflective polarizer and the dichroic polarizer wherein the structure has light diffusing property that defines the viewing zones. The structure preserves the polarization state of the light reflected by the reflective polarizer.

Each of these references has therefore anticipated the claims.

6. Claims 9-17 are rejected under 35 U.S.C. 102(f) because the applicant did not invent the claimed subject matter.

The US patent issued to Weber et al (PN. 6,025,897) and the US patent issued to Ouderkirk et al (PN. 5,828,488) as disclosed in the paragraphs above have different inventor entities from each other and have different inventor entities from the instant application which clearly demonstrates that the inventor entity of the instant application does not invent the claimed subject matter.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 9 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Stolov et al (PN. 4,560,241) in view of the admitted prior art.

Stolov et al teaches a liquid crystal display device that is comprised of a *liquid crystal layer* (25) which serves as the *light modulator*, a *reflective polarizer* (27) and a *multi-color polarizers* (28) that may consist of pattern of stripes or dots of *dichroic transmissive polarizers* of different colors, (please see Figure 4, column 3, lines 47-64 and 35-40). This reference has met all the limitations of the claims with the exception that it teaches that the dichroic polarizers are placed as front polarizer to the liquid crystal layer but does not teach explicitly that it may also be placed as rear polarizer. However the dichroic polarizers are conventionally used on both the front side and rear side of a liquid crystal panel as disclosed in the specification by the applicant, (please see page 2, lines 15-24). It would then have been obvious to one skilled in the art to place the dichroic polarizers at the rear side of the liquid crystal layer

for it is a well known practice in the art and it will function the same as placed it at the front side. It further has the advantage of providing an alternative arrangement for the multi-color image display device. The feature concerning the selectively altering of the polarization state by the liquid crystal layer and the axes orientation between the reflective polarizer and the dichroic polarizer are inherently met.

With regard to the feature concerning the supplemental lighting, the Stolov et al reference does not teach such explicitly. However Stolov et al does teach that the reflective polarizer may be a transflective rear polarizer which means that allows light to transmit through. And edge-lit and back-lit display arrangement are very common in the art to provide a supplemental lighting to enhance the contrast of the display would have been obvious to one skilled in the art.

Although this reference does not teach to use a diffusing element however to use a diffusing element in a display arrangement for the purpose of defining the viewing zone is a very common practice in the art. To modify the display of Stolov et al to include a diffusing element would therefore have been obvious to one skilled in the art for the benefit stated above.

9. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Stolov et al in view of the applicant's admitted prior art as applied to claim 9 above, and further in view of the patent issued to Schrenk et al (PN. 5,486,949).

The multi-color image display taught by Stolov et al in view of the applicant admitted prior art as described for claim 9 above have met all the limitations of the claims. These references however do not teach that the reflective polarizer has a plurality of layers. Interference polarizer that utilizes a plurality of alternatively arranged layers is very well known in the art. In particular, Schrenk et al teaches a reflective birefringent interference polarizer that is comprised of a plurality of alternatively arranged polymeric layers having nonzero stress optical coefficients, (please see columns 3 and 9). It would then have been obvious to one skilled in the art to make the reflective polarizer of Stolov et al as a birefringent

interference polarizer fort he benefit of more accurately design the transmission and reflection spectrum of the polarizer. The features of claim 11 concerning the birefringence of the layers are implicitly met by the teachings of Schrenk et al.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 9 and 12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 (original claim 10) and 2 (original claim 13) of U.S. application 09/490,879 Patent No. not assigned yet. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both recite a display having light modulator, reflective polarizer and dichroic polarizer.

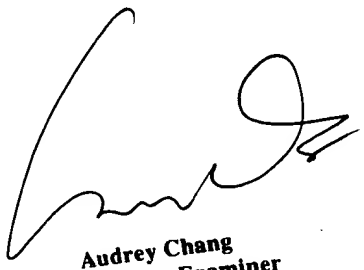
12. Claims 9-11, 13, 16-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 17, 18, 31, 43-48 and 49-56 of U.S. Patent No. 6,124,971. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both recite a display having light modulator, reflective polarizer, diffuser and dichroic polarizer.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A. Chang, Ph.D.
June 15, 2001



Audrey Chang
Primary Examiner
Technology Center 2800